WATER SHORTAGE CONTINGENCY PLAN

This packet includes copies of all of the tables that should be included in your drought plan. By using the Practice Worksheets located in the tabbed sections (1 through 7) of this notebook, you should be able to complete each of the following tables. Once the tables in this packet are completed, you will have a drought plan that should be adopted by resolution by your governing board.

Adopting Your Plan

Once you have completed Tables 1 through 18, you have all of the materials and information necessary for a complete drought plan for your district. The next step is to compile the plan in a manner which will be the most useful for you district. Then your district should officially adopt the plan so that the plan can be implemented as soon as it becomes apparent that a water shortage is imminent. The steps listed below provide a guide for adopting your plan.

1. Announce through local media that draft copies of your drought plan are available for review.
2. Set Public Meeting dates to provide the public with a forum for providing comments.
3. Incorporate comments into the draft Drought Plan to create your Final Plan.
4. Adopt the Drought Plan through an ordinance.
5. Send official copies of your plan to the Bureau of Reclamation, the California Department of Water Resources, and neighboring water districts.
6. Implement your plan through an aggressive public information campaign.
7. Develop administrative procedures to ensure enforcement of the restrictions outline in your plan.

Water Shortage Contingency Plan Cover Sheet

District Name: _____

District Address: _____

Name of Person(s) Completing Drought Plan:
_____

Bureau Plan Required (Over 2000 service connections?):
____ Yes ____ No

DWR Urban Water Management Plan Required (Over 3000 service connections or over 3000 acre-feet served?): ____ Yes ____ No

Has your agency previously prepared a Drought Plan? ____ Yes ____ No

Table 1

Available Water Supplies* (Shown in Calendar Years)			
SOURCE*	**Last Year**	**2005**	**2010**
Surface Water			
1.			
2.			
3.			
Groundwater			
Recycled Wastewater			
Imported Water Central Valley Project			
State Water Project			
Sales to Other Agencies			
Totals			
*Units of Measure: Acre-feet/Year			

**See Glossary for further explanation of categories*

Table 2

Number of Service Connections By Customer Type* (Shown in Calendar Years)			
Customer Sector	**2000**	**2005**	**2010**
Single Family			
Multi-Family			
Commercial			
Institutional			
Institutional			
Recreation			
Agriculture			
Total			

**See Glossary for further explanation of categories*

Table 3

Past, Current and Projected Water Use (Shown in acre-feet per Calendar Year)					
Customer Sector	**1990**	**1995**	**2000**	**2005**	**2010**
Single Family					
Multi-Family					
Commercial					
Institutional					
Industrial					
Recreation					
Agriculture					
Unaccounted Loss					
Total					

Table 4

Population and Per-Capita Demand			
	2000	**2005**	**2010**
Population			
Per-Capita Demand (gallons per person per day)			

Table 5

Projected Supply and Demand Comparison (Acre-feet/Year)			
	2000	**2005**	**2010**
Supply totals			
Demand totals			
Difference			

Table 6

SUPPLY RELIABILITY (Acre-Feet Per Year)				
		Multiple Dry Years		
Average/ Normal Water Year	**Single Dry Water Year 20% reduction in supply**	**Year 1 Volume 10% reduction in supply**	**Year 2 Volume 15% reduction in supply**	**Year 3 Volume 20% reduction in supply**

Table 7

Water Production and Delivery Costs ($Per Acre-Foot)	
Surface Water	
1.	
2.	
3.	
Groundwater	
Imported Water	
Recycled Wastewater	

Table 8

Water Rates to Customers ($ Per Hundred Cubic Feet)	
Customer Class	**Rate**
Single Family Block 1 Block 2 Block 3	
Multi-Family Block 1 Block 2 Block 3	
Commercial Block 1 Block 2 Block 3	
Industrial	
Recreation	
Landscape Block 1 Block 2	
Public	
Institutional	
Agriculture	

Table 9

Hypothetical Worst-Case Planning Scenario Statewide and Local Drought						
Source of Supply	**Average Year Water Supply Available (Acre-feet)**	**Multiple Dry Water Years** (Acre-feet)				
		Year 1 2001	**Year 2 2002**	**Year 3 2003**	**Year 4 2004**	**Year 5 2005**
Total Supply Sources						
Percent Supply Shortage		10%	20%	30%	40%	50%
Total Demand (assume average year demand levels)						
Difference						

Table 9A

Hypothetical Worst-Case Planning Scenario Statewide and Local Drought Supply Augmentation Option						
Source of Supply	**Average Year Water Supply Available (Acre-feet)**	**Multiple Dry Water Years** (Acre-feet)				
		Year 1 2001	**Year 2 2002**	**Year 3 2003**	**Year 4 2004**	**Year 5 2005**
Total Supply Sources						
Percent Supply Reduction		10%	20%	30%	40%	50%
New Supplies 1. 2. 3.						
Total Demand (assume average year demand levels)						
Difference						

Table 9B

Hypothetical Worst-Case Planning Scenario Statewide and Local Drought Demand Reduction Option						
Source of Supply	**Average Year Water Supply Available (Acre-feet)**	**Multiple Dry Water Years** (Acre-feet)				
		Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Total Supply Sources						
Percent Supply Shortage		10%	20%	30%	40%	50%
Percent Demand Reduction		5%	10%	15%	20%	25%
Total Demand						
Difference						

Table 9C

Hypothetical Worst-Case Planning Scenario Statewide and Local Drought Simultaneous Supply Augmentation and Demand Reduction Option						
Source of Supply	**Average Year Water Supply Available (Acre-feet)**	**Multiple Dry Water Years** (Acre-feet)				
		Year 1 2001	**Year 2 2002**	**Year 3 2003**	**Year 4 2004**	**Year 5 2005**
Total Supply Sources						
Percent Supply Shortage		10%	20%	30%	40%	50%
New Supplies 1. 2. 3.						
Percent Demand Reduction		5%	10%	15%	20%	25%
Total Demand						
Difference						

Table 10

Triggers for Implementing Drought Plan	
Stage 1 – Minimal	____ Total Supply Reduction
Stage 2 – Moderate	____ Total Supply Reduction
Stage 3 – Severe	____ Total Supply Reduction
Stage 4 – Critical	____ Total Supply Reduction

Table 11

ACTIONS FOR YOUR DROUGHT STRATEGY	STAGE
Methods to Increase Existing Supplies	
Increase use of recycled wastewater	
Increase use of nonpotable water for nonpotable uses	
Construct emergency dams	
Re-activate abandoned dams	
Drawing From Reserve Supplies	
Use reservoir dead storage	
Add wells	
Deepen wells	
Re-activate abandoned wells	
Rehabilitate operating wells	
Renegotiate contractually controlled supplies	
Methods to Increase Efficiency	
Suppress reservoir evaporation	
Reduce dam leakage	
Minimize reservoir spills	
Reduce distribution system pressure	
Conduct distribution system water audit	
Conduct distribution system leak detection and repair	
Surge and clean wells	
Modifications to Operations	
Re-circulate wash water	
Blend primary supply with water of lesser quality	
Transfer surplus water to areas of deficit	
Change pattern of water storage and release operations	
Cooperative Efforts with Other Agencies	
Exchanges	
Transfers or interconnections	
Mutual aid agreements	
Demand Reduction Actions	
Residential Plumbing Retrofit	
System Water Audits, Leak Detection And Repair	
Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections	
Large Landscape Conservation Programs And Incentives (applies only to non-residential accounts with large landscaped areas)	
High-Efficiency Washing Machine Rebate Programs	
Public Information Programs	
School Education Programs	
Conservation Programs For Commercial, Industrial, And Institutional (CII) Accounts	

Wholesale Agency Assistance Programs	
Conservation Pricing	
Conservation Coordinator	
Water Waste Prohibition	
Residential Ultra Low Flow Toilet Replacement Programs	
Implement all applicable pre-stage 1 measures	
Provide technical assistance to customers	
Begin public information campaign– drought message	
Ask customers for voluntary reductions in use	
Provide incentives to customers to reduce water consumption (rebates, free devices)	
Prohibit wasteful use of water	
Limit number of building permits issued	
Implement water shortage rate structure (Change the water rate structure from a uniform rate to an inclining block rate)	
Plumbing fixture replacement	
Request increased reduction by customers	
Require that eating establishments serve water only when specifically requested by customers	
Prohibit use of running water for cleaning hard surfaces such as sidewalks, driveways, and parking	
Require lodging hotels/motels to post notice of drought condition with tips in each guest room	
Provide weekly updates on supply conditions to media and public	
Prohibit some uses of water – i.e., lawn watering using sprinklers	
Institute rationing programs through fixed allotments or percentage cutbacks	
Reduce pressure in water lines	
Prohibit use of ornamental fountains and ponds, except when water is re-circulated (include a sign adjacent to the fountain stating that the water in the fountain is being re-circulated)	
Prohibit filling swimming pools and spas unless the pool or spa is equipped with a pool cover	
Prohibit the use of potable water for cleaning, irrigation and construction purposes, including but not limited to dust control, settling of backfill, flushing of plumbing lines, and washing of equipment, buildings and vehicles	
Vehicles and boats can only be washed at a car wash that recycles water or uses 10 gallons or less of water per cycle or with a bucket and hose equipped with a	

automatic shut-off nozzle	
Intensify implementation of all measures in previous stages	
Implement mandatory water rationing including per-capita water use allocations for residential customers	
Restrict water use only to priority uses (no lawn watering, car washing)	

Table 12

Menu of Options for Public Outreach

Public Awareness Program	**Options to be Implemented**
Bill Inserts for water bills	
Public service advertising – run for free by local media	
Paid Advertising – Newspaper	
Paid Advertising – Radio	
Paid Advertising – Television	
Paid Advertising – Movie Slides for local movie theaters	
Paid Advertising – Chamber of Commerce Newsletter	
District newsletter	
Classroom Presentations	
Drought Pamphlet – mass distribution to all customers	
Drought Website	
Public Workshops – Drought Survival – Water conservation	
Drought Information Center	
Public Advisory Committee	
Displays in District Office	
Low flow fixture rebates	
Low flow fixture distribution	
Promote use of Greywater	
Drought Tolerant Plant Tagging Program at local nurseries	
Promoting CIMIS information	
Drought Hotline	
Water Audits	
Displays in Public Libraries, at local schools, shopping malls, etc.	
Bus ads	
Billboards	
Promotional Items with a conservation message (mugs, rulers, stickers, pens)	

Table 13

Media List				
TV Stations	**Contact**	**Address**	**Phone/Fax**	**Email**
Include Government Access Channels				
Print Media				
Include newspapers from local colleges				
Include news clipping services				
Radio Stations				
Chambers of Commerce				
Politicians				
County Board of Supervisors				
City Council				
Assembly				
Congress				

Table 14

Projected Ranges of Water Sales by Stage					
	Normal	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**
Water Sales - Acre Feet per Year					
Urban					
Agricultural					
Total Acre-Feet per Year					
* Be sure to change percentages in formulas to match drought stage percentage reductions chosen by the district.					

Table 15

Revenues and Expenditures (No additional water purchases and no rate increases)					
	Normal	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**
Operating Revenues					
Urban					
Agricultural					
Total Water Sales					
Meter Charges					
Total Revenue					
% reduction					
Operating Expenses					
salaries					
overhead					
cost of supply					
production and purification					
transmission and distribution					
customer accounts					
general and administrative					
depreciation					
capital projects					
Total Operating Expenses					
Surplus or (Deficiency)					

Table 16

Project Worst Case Water Supply with Associated Costs					
	Normal	**Drought Year 1**	**Drought Year 2**	**Drought Year 3**	**Drought Year 4**
Supply and Cost					
Reservoir					
Acre-Feet					
$ per acre foot					
Groundwater					
Acre-Feet					
$ per acre foot					
Recycled Water					
Acre-Feet					
$ per acre foot					
Total Acre-Feet					
Cost of Supply					

Table 17

Projected Worst Case Water Supply With Associated Costs					
	Normal	**Drought Year 1**	**Drought Year 2**	**Drought Year 3**	**Drought Year 4**
Supply and Cost					
Reservoir					
Acre-Feet					
$ per acre foot					
Groundwater					
Acre-Feet					
$ per acre foot					
Recycled Water					
Acre-Feet					
$ per acre foot					
Water Bank					
Acre-Feet					
$ per acre foot					
Desalinated Water					
Acre-Feet					
$ per acre foot					
Total Acre-Feet					
Cost of Supply					